an image generation processing unit having a render engine which receives data from the positional information unit and the terrain database unit and which generates the 3-D virtual image representational of the terrain over which the vehicle is traveling, [The system of claim 6], wherein the image generation processing unit generates the 3-D virtual image by referencing the most recent spatial location of the vehicle in the localized terrain over which the vehicle is traveling in order to compute a heading, a pitch, and a directional vector of a current position of the vehicle, wherein the most recent spatial location of the vehicle is generated by the location calculation unit.

11. (amended) A digital computer system that correlates positional input data for generating a 3-D virtual image, representational of a localized terrain over which a vehicle is traveling, comprising:

a positional information unit which receives the positional input data provided by a satellite-based positioning system;

a terrain database unit, containing data of the localized terrain over which the vehicle is traveling; and

an image generation processing unit having a render engine which receives data from the positional information unit and the terrain database unit and which generates the 3-D virtual image representational of the terrain over which the vehicle is traveling

[The system of claim 1], wherein the image generation processing unit generates the 3-D virtual image by referencing a most recent spatial location of the vehicle in the localized terrain over which the vehicle is traveling in order to compute a heading and a pitch of a current position of the vehicle, wherein the most recent spatial location of the vehicle is generated by a location calculation unit which receives the positional input data from the positional information unit.

~~13~~. (amended) A method for generating a 3-D virtual image representational of a localized terrain over which a vehicle is traveling, comprising the steps of:

receiving positional input data provided by a satellite-based positioning system which provides latitude data, longitude data, altitude data, and time data to define a spatial location representative of an eye point position seen by an operator of the vehicle in the terrain over which the vehicle is traveling;

deriving an initial positional reading of the vehicle at time T1 from [the] a sampled GPS data, wherein the initial positional reading at time T1 is represented as $A = (X_1, Y_1, Z_1, T_1)$ where X_1 is representative of latitude at time T1, Y_1 is representative of longitude at time T1, and Z_1 is representative of altitude at time T1;

deriving a subsequent positional reading of the vehicle at time T2 from the sampled GPS data, wherein the subsequent positional reading at time T2 is

represented as B = (X_2, Y_2, Z_2, T_2) where X_2 is representative of latitude at time T2, Y_2 is representative of longitude at time T2, and Z_2 is representative of altitude at time T_2;

calculating a directional vector of the vehicle defined as the vector AB;

calculating the velocity of the vehicle according to the equation:

$$\frac{\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}}{(t_2 - t_1)}$$

generating a computer image representative of the eye point position seen by the operator of the vehicle and the directional vector of the vehicle, wherein the computer image is generated by a render engine of an image generation processing unit; and

overlaying the computer image representing the eye point position and the directional vector of the vehicle onto a simulated image of the terrain over which the vehicle is traveling to generate a 3-D virtual image.

15. (amended) The method of claim 13, wherein the sampled global positioning satellite (GPS) data is differential global positioning satellite data.

16. (amended) The method of claim 13, wherein the step of [generating the simulated image of the real-world based upon the GPS data that has been sampled] overlaying the computer image representing the eye point position and the directional vector of the vehicle onto the simulated image to generate the 3-D virtual image is accomplished by an image generation processing block of a digital computer system.

Please add the following new claims 20-29:

--20. (New Claim) The system of claim 7, wherein the system further comprises:

a radar information unit that provides radar data to the image generation processing unit, wherein the image generation processing unit incorporates the radar data from the radar information unit with data from the terrain database unit and the positional information unit to generate the 3-D virtual image representative of the terrain over which the vehicle is traveling.--

--21. (New Claim) The system of claim 20, wherein the radar information unit is a weather radar system and the radar data is representative of weather conditions.--

--22. (New Claim) The system of claim 20, wherein the radar information unit is a traffic collision avoidance system (TCAS) and the radar data is representative of vehicular traffic.--

--23. (New Claim) The system of claim 11, wherein the system further comprises:

a radar information unit that provides radar data to the image generation processing unit, wherein the image generation processing unit incorporates the radar data from the radar information unit with data from the terrain database unit and the positional information unit to generate the 3-D virtual image representative of the terrain over which the vehicle is traveling.--

--24. (New Claim) The system of claim 23, wherein the radar information unit is a weather radar system and the radar data is representative of weather conditions.--

--25. (New Claim) The system of claim 23, wherein the radar information unit is a traffic collision avoidance system (TCAS) and the radar data is representative of vehicular traffic.--

--26. (New Claim) A digital computer system that correlates differential positional input data for generating a 3-D virtual image, representational of a localized terrain over which a vehicle is traveling, comprising:

a positional information unit which receives the differential positional input data provided by a satellite-based positioning system, wherein the differential positional input data is a differential GPS data provided from a Global Positioning Satellite (GPS) unit;

a terrain database unit, containing data of the localized terrain over which the vehicle is traveling; and

an image generation processing unit having a render engine which receives differential data from the positional information unit and the terrain database unit and which generates the 3-D virtual image representational of the terrain over which the vehicle is traveling.--

--27. (New Claim) The system of claim 26, wherein the system further comprises:

a radar information unit that provides radar data to the image generation processing unit, wherein the image generation processing unit incorporates the radar data from the radar information unit with data from the terrain database unit and the positional information unit to generate the 3-D virtual image representative of the terrain over which the vehicle is traveling.--

--28. (New Claim) The system of claim 27, wherein the radar information unit is a weather radar system and the radar data is representative of weather conditions.--

--29. (New Claim) The system of claim 27, wherein the radar information unit is a traffic collision avoidance system (TCAS) and the radar data is representative of vehicular traffic.--